

REMARKS

This is intended as a full and complete response to the Office Action dated May 24, 2007, having a shortened statutory period for response set to expire on August 24, 2007. Claim 14 has been amended to correct typographical errors. No new matter has been presented by the amendment made herein. Please reconsider the claims pending in the application for reasons discussed below.

Claims 1-16 stand rejected under 35 U.S.C. § 102(b) as being anticipated by U.S. Patent No. 5,771,203 ("Soubaras"). The Examiner takes the position that Soubaras at column 4, lines 9-10, discloses determining a prediction filter from seismic data at a frequency at which swell noise is not present and applying the prediction filter to seismic data at a frequency where swell noise is present to thereby attenuate the swell noise. Applicant, however, respectfully traverses this rejection.

Soubaras is generally directed to a method for attenuating noise affecting seismic traces. The paragraphs in column 4, lines 1-14 of Soubaras are represented herein for the Examiner's convenience:

The invention provides a seismic prospective method in which:

a seismic disturbance is caused to take place in the sub-soil;
sensors are used to pick up sampled seismic data $y=[y(0), \dots, y(N)]^T$ where N is an integer, said data containing a signal y_0 that is to be isolated and that is embedded in additive noise;

the seismic data is subjected to filtering in the time domain or the frequency domain to obtain filtered data in which the signal to be isolated is absent;

the filter data is subtracted from the initial seismic data to obtain processed data $y_0(0), \dots, y_0(N)$ corresponding to the signal y_0 without additive noise;

the data acquired in this way is processed to deduce therefrom useful information about the geology of the sub-soil;

The above section relied upon by the Examiner appears to describe the manner in which Soubaras attenuates noise affecting seismic traces. Soubaras states that the initial seismic data contains signal y_0 , which is to be isolated. Signal y_0 is embedded in noise. (See column 4, lines 4-7). The initial seismic data is then subjected to filtering to obtain filtered data in which the signal to be isolated, i.e., signal y_0 , is absent. (See

column 4, lines 7-10). The filtered data is then subtracted from the initial seismic data to obtain processed data without the noise. (See column 4, lines 11-13).

However, Soubaras does not teach determining a prediction filter from the seismic data at a first frequency at which swell noise is not present and then applying the prediction filter to seismic data at a second frequency at which swell noise is present, as recited in claims 1, 6 and 16. In contrast, Soubaras discloses the opposite. That is, what is absent from the filtered data in Soubaras is signal y_0 , not the noise, e.g., swell noise. In fact, the filtered data includes the additive noise. (See column 4, lines 8-13). In this manner, Soubaras teaches away from claims 1, 6 and 16. Accordingly, claims 1, 6 and 16 are patentable over Soubaras. Claims 2-5 and 7-8 are also patentable over Soubaras since they depend from claims 1 and 6 respectively.

Claims 9 and 14 are also patentable over Soubaras since Soubaras does not teach or disclose means for determining a prediction filter from the seismic data at a first frequency at which swell noise is not present; and means for applying the prediction filter to seismic data at a second frequency at which swell noise is present, thereby to attenuate swell noise in the seismic data at the second frequency. Accordingly, claims 9 and 14 are also patentable over Soubaras. Claims 10-15 are also patentable over Soubaras since they depend from claims 9 and 14 respectively.

Claims 14 and 15 stand objected to for lacking antecedent basis. For that reason, claim 14 has been amended to replace third frequency with first frequency and fourth frequency with second frequency. Withdrawal of the objection is respectfully requested.

In conclusion, the references cited by the Examiner, neither alone nor in combination, teach, show, or suggest the claimed invention. Having addressed all issues set out in the office action, Applicant respectfully submits that the claims are in condition for allowance and respectfully request that the claims be allowed.

The prior art made of record is noted. However, it is believed that the secondary references are no more pertinent to the Applicant's disclosure than the primary references cited in the office action. Therefore, it is believed that a detailed discussion of the secondary references is not deemed necessary for a full and complete response to this office action. Accordingly, allowance of the claims is respectfully requested.

Respectfully submitted,

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